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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/649,840   | 08/27/2003  | Willibord A. Grotz   | CDT 1612 CON        | 7024             |
| 1338   | 7590        | 06/30/2004           | EXAMINER            |                  |
| KENNETH H. JOHNSON<br>P.O. BOX 630708<br>HOUSTON, TX 772630000 |             |                      | ARNOLD JR, JAMES    |                  |
|  |             |                      | ART UNIT            | PAPER NUMBER     |
|  |             |                      | 1764                |                  |

DATE MAILED: 06/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                   |                      |  |
|------------------------------|-------------------|----------------------|--|
| <b>Office Action Summary</b> | Application No.   | Applicant(s)         |  |
|                              | 10/649,840        | GROTN, WILLIBRORD A. |  |
|                              | Examiner          | Art Unit             |  |
|                              | James Arnold, Jr. | 1764                 |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 27 August 2003.
- 2a) This action is **FINAL**.                                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 13-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 13-24 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 27 August 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 24 December 2003.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 13-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chapus et al. (USPN 6,007,704).

The Chapus reference discloses a process for the production of gasoline with a low sulfur content that comprises at least one selective hydrogenation of dienes (diolefins) that are present in the starting gasoline, at least one fractionation of the gasoline that is obtained in stage a or b into at least two fractions: a light fraction and a heavy fraction, and a desulfurization treatment in one stage of at least a portion of the heavy fraction obtained from the fractionation. The reference discloses subjecting the feed to a diene hydrogenation. See Column 2, lines 40-65; See Abstract; See Column 10, lines 45-68; See Column 11, lines 1-35. See Column 12, lines 1-35.

The reference does not disclose at least one stage for increasing the molecular weight (transformation) of light sulfur-containing compounds and sulfur compounds including mercaptans, thiophenes, and thiophenic compounds that are present in the gasoline, or a process wherein selective hydrogenation of diolefins, and transformation of light sulfur-containing compounds occur simultaneously in the same reactor. The reference does not disclose separation of the feed into three fractions including an intermediate fraction and transformation of the intermediate fraction.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize at least one stage for increasing the molecular weight (transformation) of light sulfur-containing compounds and sulfur compounds including mercaptans, thiophenes, and thiophenic compounds that are present in the gasoline, or a process wherein selective hydrogenation of diolefins, and transformation of light sulfur-containing compounds occur simultaneously in the same reactor because the feed is passed over a diene hydrogenation catalyst which increases the molecular weight of the feed and would be expected to similarly increase the molecular weight of the sulfur products within the feed. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a process that involves separation of the feed into three fractions including an intermediate fraction and transformation of the intermediate fraction because the reference discloses fractionating the gasoline cut into "at least" two fractions, which implies that an intermediate fraction is possible, and because the reference teaches that lighter cuts (which can include an intermediate fraction) contain fewer sulfur compounds and may be subjected to a hydrogenation of diolefins. See Column 2, lines 40-65.

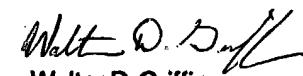
***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Arnold, Jr. whose telephone number is 571-272-1443. The examiner can normally be reached on Monday-Thursday 8:30 AM-6:00 PM; Fridays from 8:30 AM-5:00 PM with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Calderola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ja  
June 28, 2004

  
Walter D. Griffin  
Primary Examiner